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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/920,752	08/03/2001	Ken Matsumoto	862.C2319	5950

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EXAMINER	
CAPUTO, LISA M	
ART UNIT	PAPER NUMBER
2876	

DATE MAILED: 07/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/920,752	MATSUMOTO, KEN	
	Examiner	Art Unit	
	Lisa M. Caputo	2876	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 June 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *21-24,26-28,31 and 33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *21-24,26-28,31 and 33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 24 June 2005 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 21-24, 26-27, 31, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kahn et al. (U.S. Patent No. 5,864,130, from hereinafter "Kahn") in view of Goerigk (U.S. Patent No. 6,303,398).

Kahn teaches an apparatus for semiconductor wafer identification. Regarding claim 21, Kahn discloses an apparatus which reads code formed on a substrate and is used for manufacturing a device. The apparatus (apparatus 10) comprises a cassette 14 which serves as the container to contain a substrate (or a plurality of substrates as recited in claim 33 of the instant application), a transfer system which has a holding

member (wafer presentation device 12) for holding a substrate (container of substrates) and a driving mechanism (wafer presentation device 12 equipped with support member 22 having an inclined surface which is urged upward during operation to lift the wafers 16 so that the wafers 16 are aligned along a presentation axis; wafer presentation device also has a track system 34) for driving the holding member to transfer the substrate between the container and a process system (i.e. the driving mechanism works to deliver the wafers to their appropriate positions), and a reading system (laser scanner 30) which optically reads a code (bar code inscription 112) formed on the substrate in a transfer process performed by the transfer system, at least a portion of the reading system being located on at least one of said holding member and driving mechanism. In this case, the reading system is located on the driving mechanism since the laser scanner 30 is mounted on an arm assembly 32 that is attached to the track system 34 in the batch wafer presentation device 12. In addition, the reading system comprises a light reflecting portion as recited in claim 22 (see Figures 1-4, col 2 line 41 to col 4 line 47, especially col 2 line 41 to col 3 line 10).

Regarding claim 21, Kahn fails to teach a process system which performs a process using the substrate based on information of the code read by the reading system.

Goerigk teaches a method and system of managing wafers in a semiconductor device production facility. Goerigk discloses that in present semiconductor fabrication facilities, computer-aided manufacturing systems (CAM systems) control the fabrication process and provide information regarding operating conditions during these processes.

Generally, the wafers undergo a specific treatment or process flow, i.e., the entirety of procedural steps necessary for forming a specific semiconductor device such as applying photoresist, irradiating the wafer with exposure light, developing the resist and etching the wafer, etc., to produce the desired device on the wafer. The wafers are generally stored in a single wafer cassette and are routed through the corresponding process stations to perform the desired process steps. One or more wafers to be subjected to a specific treatment form a specific lot of wafers. When the specific treatment is completed, a control unit, which may be implemented in a CAM system, instructs an operator or an automated transport system to transport the corresponding wafer cassette containing said lot of wafers, or at least a part of said wafer lot, to a new starting point for another process sequence or operation (see col 1, lines 45-65).

Further, the system shown in FIG. 1 will be described in its operational status with reference to FIGS. 1-4. The wafer sorter 5 is supplied with semiconductor wafers 11, each having a wafer identification mark 10 near a defined position. For example, the identification mark 10 may be placed near a notch or a flat 12 of the wafer 11 as is shown in FIG. 2. In one embodiment, the wafer identification mark 10 consists of a 13 digit number which may contain a variety of information, such as the serial number of the wafer, type of dopant of the wafer, etc. The identification mark 10 may contain any desired information, and it may take any form that is readable by a machine or computer, e.g., a bar code, character strings, etc. (see Figures 1-4, col 4, lines 30-43). Hence, Goerigk teaches a system wherein a barcode contains information about different processes for a semiconductor wafer.

In view of the teaching of Goerigk, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ a system wherein a semiconductor process, and more specifically the exposure process, can be controlled by information read in a code because it is efficient to be able to control a wafer by accessing data on the wafer itself and having the process done automatically (i.e. more cost and time effective because the process is completed more quickly).

Regarding claims 22 and 24, Kahn as modified by Goerigk fails to specifically teach that a portion of the reading system is located on the holding member and that the code illumination portion is located on the holding member.

However, Kahn teaches that the apparatus 10 is a whole member which comprises the wafer presentation device 12, which contains the transfer system, and the holding member. Even though the reading system is more specifically on the driving mechanism as seen in Figure 1, the holding member is the wafer presentation device 12 when the container 14 is inserted into the device. Hence, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ a portion of the reading system on the holding member because the holding member is part of the apparatus and is the closest piece of the apparatus that comes in contact with the wafers. It is favorable to have a portion of the reading system, including the code illumination portion, on the holding member because there is more direct access to the wafer to ensure that the wafer is being read correctly.

Regarding claim 23, Kahn teaches that the portion of the reading system includes one of a code detecting portion and a code illumination portion. In this case,

Kahn teaches a laser scanner 30 which is a code illumination portion for illuminating the code formed on the substrate (see Figures 1-2, col 3 line 5 to col 4 line 47).

Regarding claim 26, Kahn teaches that all of the reading system is located on the driving mechanism as it is shown that the laser scanner 30 is mounted on an arm assembly 32 that is attached to the track system 34 in the batch wafer presentation device 12 (Figures 1-2, col 3, lines 5-20).

Regarding claim 27, the code includes a bar code (bar code inscription 110) (see Figure 4, col 4, lines 30-47).

Regarding claim 31, Kahn fails to disclose a process system and method which performs a process using the substrate based on information of the code read by the reading system. Regarding claim 33, Kahn fails to teach an exposure system which performs an exposure process using the substrate based on the code read by the reading system.

Goerigk teaches a method and system of managing wafers in a semiconductor device production facility. Goerigk discloses that in present semiconductor fabrication facilities, computer-aided manufacturing systems (CAM systems) control the fabrication process and provide information regarding operating conditions during these processes. Generally, the wafers undergo a specific treatment or process flow, i.e., the entirety of procedural steps necessary for forming a specific semiconductor device such as applying photoresist, irradiating the wafer with exposure light, developing the resist and etching the wafer, etc., to produce the desired device on the wafer. The wafers are generally stored in a single wafer cassette and are routed through the corresponding

process stations to perform the desired process steps. One or more wafers to be subjected to a specific treatment form a specific lot of wafers. When the specific treatment is completed, a control unit, which may be implemented in a CAM system, instructs an operator or an automated transport system to transport the corresponding wafer cassette containing said lot of wafers, or at least a part of said wafer lot, to a new starting point for another process sequence or operation (see col 1, lines 45-65).

Further, the system shown in FIG. 1 will be described in its operational status with reference to FIGS. 1-4. The wafer sorter 5 is supplied with semiconductor wafers 11, each having a wafer identification mark 10 near a defined position. For example, the identification mark 10 may be placed near a notch or a flat 12 of the wafer 11 as is shown in FIG. 2. In one embodiment, the wafer identification mark 10 consists of a 13 digit number which may contain a variety of information, such as the serial number of the wafer, type of dopant of the wafer, etc. The identification mark 10 may contain any desired information, and it may take any form that is readable by a machine or computer, e.g., a bar code, character strings, etc. (see Figures 1-4, col 4, lines 30-43). Hence, Goerigk teaches a system wherein a barcode contains information about different processes for a semiconductor wafer.

In view of the teaching of Goerigk, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ a system wherein a semiconductor process, and more specifically the exposure process, can be controlled by information read in a code because it is efficient to be able to control a wafer by

accessing data on the wafer itself and having the process done automatically (i.e. more cost and time effective because the process is completed more quickly).

3. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kahn as modified by Goerigk and further in view of Kucharczyk (U.S. Patent No. 6,460,770). The teachings of Kahn as modified by Goerigk have been discussed above.

Regarding claim 28, Kahn as modified by Goerigk fails to specifically teach that the substrate includes a transparent portion in which the code is formed.

Kucharczyk teaches a bi-directional barcode scanning system. Kucharczyk discloses that FIG. 2C is a top view of the barcode label receiving device 250. The black elements 252 and the white elements 254 comprise the barcode and are affixed to one side of the transparent or semi-transparent substrate 256 (see Figure 2C, col 5, lines 55-58). Hence, Kucharczyk teaches that a code can be formed in a transparent substrate.

In view of the teaching of Kucharczyk it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ a transparent substrate (or portion thereof) because a transparent substrate allows for a user to be able to readily see the portion of the substrate that includes the barcode during a processing system and hence the code to be scanned can be found more easily.

Response to Arguments

4. Applicant's arguments filed 24 June 2005 have been considered but are not persuasive.

5. In response to applicants arguments that Kahn does not teach or suggest anything regarding transferring a substrate from a container containing the substrate by using a transfer system having at least a portion of the reading system, and reading a code formed on the substrate in a transfer process by the transfer system, examiner respectfully disagrees and submits that Kahn does indeed teach the transferring of a substrate from its container (i.e. the holding member transfers the substrates while they are in the container), and that there is a portion of the reading system that reads the code and is on the transfer system where the reading system is located on the driving mechanism (part of the transfer system) since the laser scanner 30 is mounted on an arm assembly 32 that is attached to the track system 34 in the batch wafer presentation device which drives the system. In addition, Kahn does indeed teach the driving mechanism, which is embodied in the support member which is urged upward during operation to lift the wafers, hence the wafers are driven upward in the system in order to be delivered to the process system from their containers.

With regards to the Georigk reference, the reference teaches more than just a system in which a bar code contains information about different processes for a semiconductor wafer, as this information is integral to continue the process system.

In addition, it is respectfully submitted that Kucharczyk and Georigk are used in order to teach further limitations of the dependent claims and do not have to teach the relationship between the transfer system and the reading system, or a driving system since these limitations were already taught by Kahn.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ***Lisa M. Caputo*** whose telephone number is **(571) 272-2388**. The examiner can normally be reached between the hours of 8:30AM to 5:00PM Monday through Friday. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee can be reached at **(571) 272-2398.** The fax phone number for this Group is (571) 273-8300.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [**lisa.caputo@uspto.gov**].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LMC
July 21, 2005

DIANE I. LEE
PRIMARY EXAMINER